CLAIMS

1. A method for transferring packet-based digital data between a first communications network and a second communications network, said method comprising the steps of:

receiving a stream of packet based digital data from the first communications network, the first communications network having a prioritized communications protocol;

determining a priority code associated with a data packet of said stream;

establishing a channel in response to said priority code for communicating information in said stream of packet based digital data to a second communications network, the second communications network having a communications protocol that allows for set up and communications over discrete channels of a reserved bandwidth; and

modifying header information associated with said data packets in said stream into a format suitable for communication through said established channel for transfer to said second communications network.

2. The method of claim 1, wherein said first communications network is an Ethernet network and said second communications network is at least one of an IEEE1394 network and HyperLan 2 network.

3. The method of claim 1, wherein the step of modifying header information comprises embedding an IP header associated with said data packet into an OSI layer 3 header in a packet suitable for transmission over said second communications network having a communications protocol that allows for set up and communication over discrete channels of a reserved bandwidth.

4. A method of claim 1, further comprising the step of

determining whether said prioritized data packet requires transmission to a second device associated with said second communications network over a reserved bandwidth channel based on a priority value included in said prioritized data packet;

establishing a reserved bandwidth data transmission channel for communicating said data stream path to said second device.

5. An apparatus for providing packet-based digital communications between a first communications network and a second communications network, said apparatus comprising:

a first transceiver adapted for communicating with the first communications network, the first communications network having a prioritized communications protocol;

a second transceiver adapted for communicating with the second communications network, the second communications network having a communications protocol that allows for set up and communications over discrete channels of a reserved bandwidth;

a processor, in communication with said first transceiver, for determining a priority code associated with a data packet received by said first transceiver;

said processor, further in communication with said second transceiver, for establishing a channel of reserved bandwidth;

wherein said processor is adapted to perform a first modification process to convert a data packet received from said first transceiver into a format suitable for communication through said second transceiver to said second communications network; and

wherein said processor is further configured for performing a second modification process to convert a data packet received from said second transceiver

into a format suitable for communication through said first transceiver to said first communications network.

6. The apparatus of claim 5 wherein said first communications network is an Ethernet network.

7. The apparatus of claim 5 wherein said second communications network is an IEEE 1394 network.

8. The apparatus of claim 5 wherein said second communications network is a HyperLan 2 network.

9. The apparatus of claim 5 wherein said processor establishes the need to set up a reserved bandwidth communications channel through said second transceiver based upon the value of said priority code received by said first transceiver.

10. The apparatus of claim 5 wherein said first modification process embeds an IP header associated with said data packet received from said first transceiver into an OSI layer 3 header in a packet suitable for transmission over said second communications network.

11. The apparatus of claim 5 wherein said second modification process strips from a data packet received from said second communication network a data header associated with said second communication network; and wherein said second modification process further converts said data packet into a format suitable for transmission to said first communications network.

12. A method for adapting packet-based digital communications between a first communications network and a second communications network, said method comprising the steps of:

detecting in a communication from a first device in the first communications network, a prioritized data packet, the first communications network having a prioritized communications protocol;

determining whether said prioritized data packet requires transmission to a second device, in the second communications network, over a reserved bandwidth channel based on a priority value included in said prioritized data packet, the second communications network having a communications protocol that allows for set up and communications over discrete channels of a reserved bandwidth;

establishing communications with said second device to open a reserved bandwidth data transmission channel;

determining that said reserved data transmission channel has been opened;

modifying said prioritized data packet to be suitable for communications over said second communications network.

13. The method of claim 12 wherein said first communications network is an Ethernet network.

14. The method of claim 12 wherein said second communications network is an IEEE 1394 network.

15. The method of claim 12 wherein said second communications network is a HyperLan 2 network.

16. The method of claim 12 wherein said modifying of said prioritized data packet embeds an IP header associated with said data packet received from said communication from a first device into an OSI layer 3 header in a packet suitable for transmission to said second device over said second communications network.

17. The method of claim 12, further comprising determining when there is no more data to be received from said first device and establishing communications with said second device to close said reserved data transmission channel.

18. The method of claim 12 further comprising

establishing communications with said second device to close said reserved data transmission channel after a predetermined period of time within which no further communication is received from said first device.

19. The method of claim 12 wherein said communications with said second communications network is monitored for bandwidth usage and communications is established over said network when necessary to modify the amount of said reserved bandwidth based on said bandwidth usage.

20. The method of claim 12 wherein said communications with said second device to open a reserved bandwidth data transmission channel further comprises evaluating a portion of a data header contained in said prioritized data packet and requesting a bandwidth size based on the results of said evaluation.

21. A computer readable medium containing code for controlling operation of a processor capable of performing the method of claim 12.

22. An apparatus for adapting packet-based digital communications between a first communications network and a second communications network, said apparatus comprising:

a first transceiver adapted for communicating with the first network, the first communications network having a prioritized communications protocol;

a second transceiver adapted for communicating with the second communications network, the second communications network having a communications protocol that allows for set up and communications over discrete channels of a reserved bandwidth;

a processor suitable for communicating with said first transceiver and for determining a priority code associated with a data packet received by said first transceiver;

said processor further suitable for communicating with said second transceiver so as to set up a channel of reserved bandwidth;

wherein said processor is adapted to perform a first modification process to convert a data packet received from said first transceiver into a format suitable for communication through said second transceiver to said second network; and

wherein said processor is further suitable for performing a second modification process to convert a data packet received from said second transceiver into a format suitable for communication through said first transceiver to the first communications network.